

REMARKS

Reconsideration and allowance of the above-identified application are respectfully requested. Claims 1-4 and 6-17 remain pending, wherein it is proposed to amend claims 1, 3 and 4.

Entry of the amendments to claims 1, 3 and 4 in the period after a final rejection is appropriate because these amendments correct typographical errors, and hence, do not require a further search or consideration. Because the proposed amendments to claims 1, 3 and 4 merely correct typographical errors, it is respectfully submitted that these are not narrowing amendments.

Claims 1 and 4 are objected to for minor informalities. Specifically, the Office Action states that the word "gas" should appear after the word "coating" in line 5 of this claim. The relevant portion of claim 1 recites "heating the mixture to a temperature at which a substantially gaseous coating comprising CrCl is formed." It is respectfully submitted that the recitation of "a substantially gaseous coating" in claim 1 is clear and that amending this element to recite a "gaseous coating gas" as proposed in the Office Action would result in redundant language. Claim 4 has been amended as suggested in the Office Action.

For at least those reasons stated above, it is respectfully requested that the objection to claims 1 and 4 be withdrawn.

Claims 1-4 and 6-9 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over the combination of GB 2,328,219 to MTU ("MTU") in view of

U.S. Patent No. 4,148,275 to Benden et al. ("Benden"). This ground of rejection is respectfully traversed.

The rejection of claim 1 as being obvious in view of the combination of MTU and Benden is improper because the rejection does not consider the claimed invention as a whole. Additionally, it is respectfully submitted that the combination does not disclose or suggest all of the elements of claim 1 and that the Office Action has not established that there would be a reasonable expectation of success with the proposed combination of MTU and Benden.

As set forth in the Supreme Court's decision in *Graham v. John Deere*, a determination of obviousness under 35 U.S.C. § 103 requires that the claimed invention be considered as a whole. M.P.E.P. § 2141.02, citing *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983), states that "[i]n determining the differences between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious."

MTU discloses a diffusion process for coating the outside of a workpiece 7. Specifically, MTU discloses a closed cycle process driven by thermal convection of different temperatures of the sources and the substrate inside the reaction container 1. The metal halide is produced from donor containers 9a-9c which are positioned at the bottom, the top and the side of the reaction container 1. As discussed on pages 10 and 11 of MTU:

[o]wing to thermal convection, the metal halides raise at the outside of the reaction container 3 and fall again in the region of the

middle of the reaction chamber 1 in the vicinity of the upright portion of the heat-conducting device 8 via the donor metal containers 9c and 9a. Thus a gas circuit is formed which is induced by the temperature gradients produced by the cooling arrangement 6 in co-operation with the heat-conducting device 8.

MTU discloses that a “substantial advantage of the process according to the invention is that uniform smooth layers having a high surface quality can be produced.”

Benden discloses an apparatus for gas phase deposition of a substantially uniform coating thickness over internal surfaces of hollow articles. (Abstract). Benden discloses that “[w]hen internal passages are required to be coated using the pack process, difficulties are encountered because of the internal passages, which in many cases are quite small.” (Col. 1, lines 47-50). To address these difficulties, Benden discloses a deposition process which involves the coating gas passing through gas transport tubes 12 into the interior of the hollow articles 10 in a direction that is against the force of gravity. (See FIGURE). Benden further discloses that the upper chamber 8 “may contain another source of coating gas, powder mixture 16, for depositing a coating on the exterior surface of each article simultaneous with the internal coating.”

Applicant’s claim 1 recites a process which involves “the dissipating of the coating gas and the exposing of the inner surface of the component occur automatically by the force of gravity.” The Office Action recognizes that MTU does not disclose a process which coats the interior surface of articles and relies upon Benden for such a disclosure. However, MTU and Benden each do not

disclose or suggest a process in which dissipating of the coating gas and exposing of the inner surface “occur automatically by the force of gravity.” Instead, the Office Action relies upon one document which discloses coating exterior surfaces of components using a heat convection process (MTU) and another document which discloses coating interior surfaces of components using a process which operates against gravity and using a separate process for coating the exterior of components. Accordingly, it is respectfully submitted that if one of ordinary skill in the art, at the time of the invention, reviewed the disclosures of MTU and Benden they would not arrive at Applicant’s claimed invention without the benefit of reviewing Applicant’s disclosure. In other words, by concentrating on the differences between Applicant’s claim 1 and MTU (i.e., the lack of disclosure of coating interior surfaces of articles), instead of considering Applicant’s claim 1 as a whole, the Office Action incorrectly concludes that one of ordinary skill in the art would modify MTU’s disclosure to coat interior surfaces of articles automatically by gravity when no such disclosure exists in MTU or Benden.

With regard to whether the Office Action has established a proper *prima facie* case of obviousness, M.P.E.P. § 2143 sets forth the basic criteria required to establish obviousness. The second and third basic criteria are that there must be a reasonable expectation of success and “the prior art reference (or references when combined) must teach or suggest all the claim limitations”.

With regard to the third basic criteria, it is respectfully submitted that the combination of MTU and Benden does not disclose or suggest all of the elements

of Applicant's claim 1. Specifically, the combination of MTU and Benden does not disclose or suggest that "the dissipating of the coating gas and the exposing of the inner surface of the component occur automatically by the force of gravity."

As discussed above, MTU does not disclose exposing the inner surface of a component and Benden discloses a process which coats the inner surfaces of components against gravity and a separate process for coating the exterior of components. In order for the combination of MTU and Benden to expose inner surfaces of components automatically by the force of gravity, one would have to further modify the combination of MTU and Benden such that the components are rotated by 180°. However, the Office Action has not explained where one of ordinary skill in the art would have arrived at such a conclusion to ignore the express disclosure of Benden that the openings of the components should face towards the earth. Accordingly, it appears that this conclusion is based upon an attempt to selectively piece together portions of the disclosures of MTU and Benden, and then further modifying these selected portions, using Applicant's claim 1 as a guide. Accordingly, it appears that the conclusion that MTU and Benden disclose or suggest all of the elements of Applicant's claim 1 is based upon improper hindsight reconstruction. Moreover, because MTU and Benden do not disclose or suggest rotating the components 180° from the position expressly disclosed in the FIGURE of Benden, the combination would not expose the interior surface of the component automatically by force of gravity as recited in Applicant's claim 1.

With regard to the second basic criteria of a *prima facie* case of obviousness, it is respectfully submitted that the Office Action has not established that the combination of MTU and Benden has a reasonable likelihood of success.

As discussed above, MTU discloses a heat convection process for coating the outside of components using a particular arrangement of donor containers 9a-9c and Benden discloses a process which operates in a direction that is opposite to that of the force of gravity and a separate process for coating the exterior of components. As also discussed above, both MTU and Benden recognize that the coating process should provide uniform coatings and that Benden recognizes that the internal passages for coating interiors of components are "in may cases...quite small." The Office Action states that there would have been "a reasonable expectation that the [MTU] process would provide chromium coatings to such internal surfaces...[because] the gas would flow into the cooling holes as the thermal convection of [MTU] would act to force the gas into the internal portions of the article as well." However, it is not clear that merely placing components with an opening to their interior surfaces in the apparatus of MTU would provide the uniform coating that is desired by the processes disclosed by both MTU and Benden. Moreover, because MTU discloses that "the metal halides raise at the outside of the reaction container 3 and fall again in the region of the middle of the reaction chamber 1" it is not clear how the metal halides would enter the small internal passages of the components when they

are arranged in the manner disclosed by Benden (i.e., with the opening facing towards the earth). Accordingly, it is respectfully submitted that the Office Action has not explained how and why there would be a reasonable expectation of success if the disclosures of MTU and Benden would be combined in the manner described in the Office Action.

Because the Office Action has not considered Applicant's claimed invention as a whole and has not established the second and third basic criteria of a *prima facie* case of obviousness, it is respectfully submitted that the rejection of Applicant's claim 1 is improper. Claims 2-4 and 6-9 depend from claim 1, and hence, the rejection of these claims is also improper.

For at least those reasons stated above, it is respectfully requested that the rejection of claims 1-4 and 6-9 as allegedly being obvious in view of the combination of MTU and Benden be withdrawn.

All outstanding objections and rejections having been addressed, it is respectfully submitted that the present application is in condition for allowance. Notice to this effect is earnestly solicited. If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

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If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #038741.50233US).

Respectfully submitted,

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